UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

WSOU INVESTMENTS, LLC D/B/A BRAZOS LICENSING AND DEVELOPMENT, Plaintiff, v. HEWLETT PACKARD ENTERPRISE COMPANY, Defendant.	Nos. 6:20-cv-00725-ADA 6:20-cv-00726-ADA 6:20-cv-00727-ADA 6:20-cv-00728-ADA **JURY TRIAL DEMANDED**

BRAZOS'S OPENING CLAIM CONSTRUCTION BRIEF REGARDING U.S. PATENT NOS. 7,280, 534; 7,386,630; 7,443,832; AND 7,519,056

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I. INTRODUCTION

Brazos owns, and HPE has infringed, four patents describing methods and devices that allow for more effective and efficient management of enterprise computer networks. These four patents use claim language that is familiar to those skilled in the relevant art, and there is a heavy presumption that the claim terms should be given their plain and ordinary meanings. There are only two exceptions to this familiar rule: when the patentee acted as a lexicographer and defined the term and when there is a clear disavowal of claim scope.

Brazos applies these established principles here, proposing the disputed terms should have their plain and ordinary meanings except where one of the two exceptions clearly apply. HPE, by contrast, offers complicated constructions that are contrary to both the language of the patents and claim construction principles. For example, HPE disregards express definitions provided by the patentees, seeks to import limitations from the specifications, and even invents entirely new definitions, without any basis in the intrinsic evidence, including for commonly understood terms. HPE's proposed constructions invite error. They should be rejected.

II. U.S. PATENT NO. 7,280,534 (CASE NO. 6:20-CV-00725-ADA)

The '534 patent is directed to providing managed internet protocol ("IP") routing services for layer-2 overlay IP virtual private networks. *See* '534 patent at 1:7–10. A VPN is "a cost effective and secure way of extending enterprise network resources over a shared public data network." *Id*. at 1:15–17. "The VPN functions as an overlay network that uses the public network to carry data traffic between corporate sites and users, maintaining privacy through the use of tunneling protocols and security procedures." *Id*. at 1:15–26. Two methods of implementing a service provider-based IP-VPN are multi-protocol label-switching ("MPLS") and virtual routers. *See id*. at 1:27–29. "MPLS is a widely supported method of speeding up IP-based data communications over service provider networks." *Id*. at 1:36–38. Certain types of

switches cannot process IP packets and service providers implementing such switches cannot offer MPLS-like services. *Id*. at 1:54–57. "[U]pgrad[ing] the network to include IP-enabled edge devices, such as ingress and egress label switch routers, but such an upgrade may be considered costly to the service provider and customers. *Id*. at 1:60–64. The claimed inventions offload "the routing responsibility from the customers and place[] the burden of establishing the routing tables at the service provider," allowing customers and service providers to utilize layer-2 point-to-point connectivity in a cost-effective manner. *Id*. at 8:2–6.

A. "associated IP service controller (IPSC)" (claims 1, 20) / "IP service controller (IPSC) associated with a CE" (claim 24)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	one of at least two distinct mechanisms for exchanging routing information between at least two customer edge switches that is installed either on the switches themselves or at a remote server where it maintains a fixed association with a subset of customer edges

These terms do not require construction and should carry their plain and ordinary meaning. The '534 patent makes clear that the IPSC is a module installed within a networking device that "serves as a mechanism for exchanging routing information [] between the edge switches 108, as opposed to forwarding data." '534 patent at 4:21–25. In the context of the claims, the IPSC is associated with a customer edge ("CE") device. *See* '534 patent at 10:1–17. The meaning of these terms is clear to a person of ordinary skill in the art.

HPE seeks to limit the definition of an IPSC to "one of at least two distinct mechanisms for exchanging routing information," adds a requirement that routing information is exchanged between "at least two customer edge switches," and narrows the scope to exemplary embodiments of "the switches themselves or at a remote server." The intrinsic record does not support these limitations. The specification does disclose a preferred embodiment in which the

IPSC is installed in an edge switch, *see* '534 patent at 4:19–25, and an alternative embodiment in which the IPSC is installed on a controller board in a server, *see id*. at 4:33–40, but there is nothing in either the claims or the specification that suggests that these examples should be deemed an exhaustive list of the ways to exchange routing information. Accordingly, HPE's efforts to limit the broad claim language is error.[1]

HPE seeks to further limit the scope of the claim language, requiring "a fixed association with a subset of customer edges." This restriction is also unsupported by the intrinsic evidence. The '534 patent does not require the association between the IPSC and the customer edges to be "fixed." To the contrary, the specification states that "the data virtual circuits (VCs) 110 may be permanent VCs (*i.e.*, permanently defined in the routing tables in the switches or routers) or switched VCs (established across the network on an as needed basis), as required." *Id.* at 3:48–52. Moreover, the specification makes clear that "the customers dictate the policies that determine whether a particular collection of sites form a VPN." *Id*. at 3:55–57. Under HPE's construction, if a customer makes adjustments to the sites forming the VPN under its policy, or if a particular customer edge device within the VPN goes offline due to maintenance or failure, the network would seemingly no longer practice the claimed invention because the association with the specific subset of customer edges within the VPN is not "fixed." This result is illogical and impractical. HPE's construction, which adds ambiguity and confusion not found in the patent itself, is erroneous.

[1] *See Comark Commc'ns*, *Inc*. *v*. *Harris Corp*., 156 F.3d 1182, 1187 (Fed. Cir. 1998) ("Although the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.").

B. "unique loop-back addresses of customer edges (CE)" (claims 1, 24) / "unique loop-back addresses of other customer edges (CE)" (claim 20)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	unique IP addresses over the OOB (out-of-band) control virtual circuit, where the OOB control virtual circuit defines paths by ATM (Asynchronous Transfer Mode), FR (Frame Relay) or other layer 2 connectivity type, and where the IPSC stores the CE loop-back information in the routing databases (tables)

HPE recognizes that the terms "unique" and "of [other] customer edges (CE)" should be given their plain and ordinary meanings, as it does not offer any definition of those terms. HPE's proposed construction addresses only the term "loop-back address." The specification makes clear that "loop-back address" is a term of art that is readily understood by persons of ordinary skill. *See*, *e.g.*, '534 patent at 5:8–45, 6:61–7:17. Specifically, it is a "unique IP address" assigned to each CE device that loops back to the same device. *See id.*; *see also* FIG. 4A; Ex. 2, RFC 3330, Special-Use IPv4 Addresses (Sept. 2002), WSOU-HPE-00008247 at WSOU-HPE-00008247–54 ("A datagram sent by a higher level protocol to an address anywhere within this block should loop back inside the host."). Indeed, even HPE's own technical documents describe a loopback address as "[an] IP address [] used only for internal traffic transmitted within the switch and [] not used in packet headers in egress traffic sent to network devices." Ex. 1, HPE, *Lookback interfaces*, HP Switch Software Basic Operation Guide (3d ed. Aug. 2015), WSOU-HPE-00007890.

Despite this evidence, HPE here proffers a construction that includes multiple limitations that are not supported by the intrinsic evidence. It seeks to substantially narrow the definition of a "loop-back address" to an "IP address over the OOB (out-of-band) control virtual circuit, where the OOB control virtual circuit defines paths by ATM (Asynchronous Transfer Mode), FR (Frame Relay) or other layer 2 connectivity type, and where the IPSC stores the CE loop-back

information in the routing databases (tables)." HPE's construction is based on an incorrect reading of a typo in the specification. The '534 patent states, "A CE device 122 advertises its loop-back address (*i.e.*, a unique IP address over the OOB control virtual circuit 124, where the IPSC 130 stores the CE loop-back information in the routing databases (tables) 308." '534 patent at 5:25–29. The parenthetical phrase following "loop-back address" is not closed, but it is clear from the context that the closing parenthesis should appear after the word "address." Properly read, the sentence states: "A CE device 122 advertises its loop-back address (*i.e.*, a unique IP address**)** over the OOB control virtual circuit 124. . . " (emphasis added at correction of typo).

The other limitations that HPE inserts in its proposed construction are taken from various examples described in the specification. For instance, "a separate control virtual circuit (VC) 124 is utilized between the CE 122 and the IPSC 130 of the respective edge switch 108 to exchange CE to CE reachability (*i.e.*, addresses), as well as provide control information. The separate control VC 124 is ***illustratively*** an ATM/FR out-of-band (OOB) circuit path from the data carrying virtual circuits 110." '534 patent at 5:16–22 (emphasis added). HPE ignores the modifier "illustratively" and advances a definition that is inconsistent with the usual meaning of "loop-back address." It is well-settled, however, that "a departure from the ordinary and customary meaning is the exception, not the rule."[2] Nothing in the specification or the file history here justifies HPE's departure from the plain meaning.

[2] *Meetrix IP, LLC v. Citrix Sys., Inc.*, No. 1:16-CV-1033-LY, 2017 WL 5986191, at *2 (W.D. Tex. Dec. 1, 2017); *see also Augme Techs., Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1339 (Fed. Cir. 2014) ("Neither the specification nor the prosecution history includes any lexicography or disavowal that would justify a departure from the plain meaning.").

C. "broadcasting from said associated IPSC, said IP addresses of said associated customer networks to other IPSCs" (claims 1, 20, 24)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	sending, by an IPSC, the IP addresses of said associated customer networks to other IPSCs over a layer 2 (*i.e.* Frame Relay or ATM) medium

HPE's proposed construction improperly seeks to define the word "broadcasting" as "sending" and to add a requirement that the "IP addresses of said associated customer networks" are sent to other IPSCs "over a layer 2 (*i.e.* Frame Relay or ATM) medium."

HPE has no reasonable basis to construe the word "broadcasting"—a term commonly understood in the art—to mean "sending." To the contrary, the patentee uses both "broadcasting" and "sending" in the claims, and "different claim terms are presumed to have different meanings."[3] In particular, Claim 1 recites "sending IP addresses of customer networks associated with said CE to an associated IP service controller (IPSC);" "broadcasting from said associated IPSC, said IP addresses of said associated customer networks to other IPSCs;" "sending, from said CE to said associated IPSC, a list of received loop-back addresses;" and "sending, from said associated IPSC to said CE, customer network addresses received from other IPSCs." '534 patent, at 8:13–29. The distinction between the terms is evident from the context: during the "broadcasting" step, the IPSC communicates with all other connected IPSCs in the service provider network, but when "sending" the network devices communicate with one another one-on-one. *See id*. at FIGS. 1, 2 (and accompanying descriptions); *see also* '056 patent at 1:65–67 ("A packet that is broadcast within a specific broadcast domain is sent to ***all*** ports in

[3] *Helmsderfer v. Bobrick Washroom Equip., Inc*., 527 F.3d 1379, 1382 (Fed. Cir. 2008); *accord Applied Med. Res. Corp. v. U.S. Surgical Corp*., 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) ("[T]he use of two terms in a claim requires that they connote different meanings . . . ."); *SIPCO, LLC v. Emerson Elec. Co*., 794 F. App'x 946, 949 (Fed. Cir. 2019) ("Because the patentee chose to use different terms . . . we presume that those two terms have different meanings.").

the broadcast domain except the port on which the packet was received." (emphasis added)). Indeed, even a layperson can recognize the difference between "broadcasting" a newscast to every radio within range and "sending" a newspaper directly to a subscriber's home. The intrinsic evidence does not support HPE's interpretation of "broadcasting" and the word choice of the patentee should control.

HPE also inserts a requirement that the recited "IP addresses of said associated customer networks to other IPSCs" must be broadcast "over a layer 2 (*i.e.* Frame Relay or ATM) medium." The phrase "over a layer 2 (*i.e.* Frame Relay or ATM) medium" does not appear anywhere in the claims, and none of the claims restrict the method to a layer 2 medium. Accordingly, HPE's proposed limitation is wrong.[4] Although the specification discloses that a benefit of the invention is enabling a "service provider to provide IP-VPN services for customers and service providers utilizing layer-2 point-to-point connectivity, such as ATM, frame relay, ***and the like***, in a cost-effective manner,"[5] '534 patent at 8:2–6 (emphasis added); *see also id*. at 8:7–11 ("Although various embodiments that incorporate the teachings of the present invention have been shown and described in detail herein, those skilled in the art can readily devise many other varied embodiments that still incorporate these teachings."), "it is improper to read limitations from a preferred embodiment described in the specification—even if it is the only

[4] *See Dayco Prods*., *Inc*. *v*. *Total Containment*, *Inc*., 258 F.3d 1317, 1327 (Fed. Cir. 2001) (proscribing the addition of limitations neither required by claim terms nor unambiguously required by either the specification or the prosecution history of a patent); *see also K-2 Corp*. *v*. *Salomon S.A*., 191 F.3d 1356, 1362–63 (Fed. Cir. 1999).

[5] '534 patent at 8:2–6 (emphasis added); *see also id*. at 8:7–11 ("Although various embodiments that incorporate the teachings of the present invention have been shown and described in detail herein, those skilled in the art can readily devise many other varied embodiments that still incorporate these teachings.").

embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited."[6]

III. U.S. PATENT NO. 7,386,630 (CASE NO. 6:20-CV-00726-ADA)

The '630 patent describes a solution to problems that arise when a network "treats all incoming packets the same." '630 patent at 1:36–39. Differentiated services ("Diffserv") and MPLS are protocols and functionalities for "making such packet treatment and routing decisions in more sophisticated ways." *Id*. at 1:44–48. Diffserv provides a "scalable Quality of Service (QoS) support for internet protocol (IP) networks" in which "[p]acket traffic is classified and conditioned at the edge of the network by edge devices, such as edge routers or gateways." 1:49–53. Thus, "Diffserv functionality 110 simplifies the processing and storage requirements at core routers." *Id*. at 1:50–63. "MPLS can relieve congestion and maximize bandwidth utilization by allowing multiple paths between source and destination," but "does not define or contain QoS services." *Id*. at 2:22–25.

Diffserv does not work easily with MPLS functionality, however. *See id*. at 2:25–3:4. Accordingly, the '630 patent describes inventions that overcome challenges "in supporting Diffserv/MPLS policy management due to different recommendations from the standards, and the limited capabilities supported at the network elements." *Id*. at 2:43–45.

[6] *Liebel-Flarsheim Co. v. Medrad, Inc*., 358 F.3d 898, 913 (Fed. Cir. 2004).

A. "a customer policy comprising a tunneling mode and a tunnel group identifier" (clams 1, 12, 18)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	a policy of a network user that comprises a selected tunneling mode that defines the method of translating the Diffserv information in the MPLS headers into the DSCP value in the encapsulated IP header when packets exit the MPLS network, and comprises a named identifier of groups of network tunnels with similar properties that form a certain topology

HPE's proposed construction first equates "a customer policy" with "a policy of a network user." This re-definition is not supported by the specification, which explains that "[c]ustomer policies define the rules applied to forward certain types of customer traffic. Customer policies include source/destination host groups, application profiles, traffic profiles, service class, policing action and role names. Customer policies can be extended to include a tunnel group identifier and a tunneling mode, when supporting MPLS." '630 patent at 6:6–11. The meaning of the term "customer policy" is clear and HPE's rewrite serves no purpose.

Next, HPE again attempts to improperly import limitations into claim terms to redefine "tunneling mode" and "tunnel group identifier." This violates basic claim construction principles barring the importation of limitations from the specification.[7] "Tunneling mode" is a term of art readily understood by a person of ordinary skill. In the Background, the patentee explains:

> Tunneling mode defines the method of translating the Diffserv information in the MPLS headers (labels and EXP field) into the DSCP value in the encapsulated IP header when packets exit the MPLS network. There are two essential modes of tunneling: pipe mode and uniform mode. For pipe mode, the egress router keeps the DSCP of the encapsulated IP header. For uniform mode, the

[7] *See*, *e.g.*, *Liebel-Flarsheim*, 358 F.3d at 913.

> egress router overwrites the original DSCP with the Diffserv information contained in the MPLS Shim Header.

'630 patent at 2:62–3:4. In this passage, the patentee was describing the state of the art, ***not*** engaging in lexicography by defining a claim term in a way that differs from the accepted understanding.[8]

HPE's attempt to rewrite "tunnel group identifier" as a "named identifier of groups of network tunnels with similar properties that form a certain topology" is confusing, ambiguous, and unsupported by the intrinsic evidence. The specification describes:

> Tunnel group 442 is a set of tunnels that share the same properties and form a certain topology, such as a mesh or a star. Tunnel group 442 identifies the tunnels that carry traffic of identified customers. Tunnel group 442 is created by specifying end point devices, and by connecting topology and tunnel specific properties. Tunnel specific properties can include bandwidth, traffic profiles, holding priority, setup priority and route constraints. Tunnel group 442 also serves as an identifier that the different policies associate with, such as the EXP-to-PHB mapping policy. Tunnel group 442 configures (*i.e.*, creates, maintains and deletes) MPLS tunnels such that IP operators do not need to create tunnels individually. Instead, IP operators specify the end-point routers and the inter-connecting topology.

'630 patent at 7:41–54. The meaning of "tunnel group identifier" is exactly what the claims say it is—"a tunnel group identifier." The limitation that HPE seeks to add—"comprises a named identifier of groups of network tunnels with similar properties that form a certain topology"—is without any context and does not appear anywhere in claims or the specification. In addition,

[8] *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1043–44 (Fed. Cir. 2019) ("We have previously explained that "[t]o act as its own lexicographer, a patentee must clearly set forth a definition of the disputed claim term other than its plain and ordinary meaning." "It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must 'clearly express an intent' to redefine the term.") (alteration in original) (citations omitted); *see also GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) ("To act as its own lexicographer, a patentee must 'clearly set forth a definition of the disputed claim term,' and 'clearly express an intent to define the term.'").

HPE's proposed construction is vague and confusing. It is unclear under what circumstances an "identifier" is "named," when properties are "similar," or when those properties "form a certain topology." HPE's construction is unnecessary, unhelpful, unsupported by the intrinsic record, and should be rejected as a misguided attempt to rewrite the claims to HPE's benefit.

B. "corresponding to the tunnels" (claim 1)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	Indefinite

HPE asserts that "corresponding to the tunnels" is indefinite. HPE is wrong and cannot meet its high burden to prove by clear and convincing evidence that this term, when read in light of the specification, fails to inform a person of skill in the art at the relevant time "about the scope of the invention with reasonable certainty."[9]

In relevant part, claim 1 of the '630 patent recites:

> A system comprising:
> a policy server device that is arranged to . . . ,
> . . .
> send the mapping policy and the customer policy to interfaces of devices of a network that includes multi-protocol label switching tunnels, corresponding to the tunnels, at least one of the network devices comprising an egress interface of one of said multi-protocol label switching, wherein the interfaces and the customer policy are associated with a same role name.

'630 patent at 11:35–49. While it may be drafted in "patentese," the claim means exactly what it says, and its scope is not unclear. The claimed system includes essential elements of a "policy server" that, among other things, sends the mapping policy and the customer policy to network device interfaces that include MPLS tunnels, and corresponding to those tunnels, at least one of the network devices includes an egress interface of one of the MPLS tunnels, where the

[9] *Nautilus*, *Inc*. *v*. *Biosig Instruments*, *Inc*., 572 U.S. 898, 910–11 (2014).

interfaces and the customer policy are associated with a same role name. It would be untenable for HPE to take the position that a person of ordinary skill in the art in the field of communication networks and data packet routing in such networks does not know the meaning of a "tunnel." *See*, *e.g.*, Exs. 3, 4. "Corresponding" is a plain English word. Thus, when read carefully and in view of the specification, the meaning of "corresponding to the tunnels" is clear, and this term should be afforded its plain meaning.

C. "policy targets" (claims 12, 18)

Brazos's Proposed Construction	HPE's Proposed Construction
network nodes where the mapping policy, the network policy, and/or the customer policy, including any specific routing assignments dictated by such policies, are enforced	indefinite

The patentee acted as lexicographer in defining the term "policy target" to mean "network nodes where the mapping policy, the network policy, and/or the customer policy, including any specific routing assignments dictated by such policies, are enforced." *See* '630 patent at 5:52–54 ("A policy target refers to any network device at a network node where the policy is enforced, such as a router."); *see also id*. at 4:56–59 ("In this case, policy targets are network devices that are to implement the specific routing assignments, and the device specific commands are deployed to the interfaces of such network devices."). When considered in the context of asserted claim 12, it is clear that the policies being deployed are the "mapping policy," the "customer policy," and the "network policy." *See id*. at 12:58–13:11; *see also id*. at 5:58–60 ("According to one embodiment, different types of policies are used including: service policies, network policies, customer policies and mapping policies."). "Where, as here, the patentee has

clearly defined a claim term, that definition '[u]sually…is dispositive; it is the single best guide to the meaning of a disputed term.'"[10]

HPE errs in refusing to recognize that the above lexicography controls.[11] Instead HPE has taken the position that this term is indefinite. In the face of unmistakable lexicography, HPE cannot demonstrate by clear and convincing evidence that one of skill in the art would be unable to determine the scope of the invention with reasonable certainty based on any failure by the patentee to provide full disclosure regarding the meaning of the term "policy target."[12]

IV. U.S. PATENT NO. 7,443,832 (CASE NO. 6:20-CV-00727-ADA)

The '832 patent is directed to "determining data stream switchpaths between a 'departure' switching unit and a 'destination' switching unit" in a label switched network such as MPLS or GMPLS. *Id*. at 1:6–10. "Setting up a switched path consists in adding to the data of a stream a label associated with the path to be taken and reserving the resources necessary for routing the stream to the destination node, allowing for the type of service (ToS) and/or the quality of service (QoS) associated with the stream." *Id*. at 1:21–26. Previous ways of calculating a label switched path ("LSP") resulted in congestion, did not factor in important criteria such as bandwidth, were limited in their reliability, or took a great deal of calculation time. *Id*. at 1:32–55. The '832 patent addresses these drawbacks. *Id*.

[10] *See Jack Guttman*, *Inc*. *v*. *Kopykake Enters*., *Inc*., 302 F.3d 1352, 1360–61 (Fed. Cir. 2002) (alteration in original) (citation omitted).

[11] *See e.g*., *Fisher-Rosemount Sys*., *Inc*. *v*. *Invensys Sys*., *Inc*., No. A-13-CA-587-SS, 2015 WL 1275910, at *11 (W.D. Tex. Mar. 19, 2015) (instructing that "[c]lear definitions are usually set off by quotation marks or are marked by the word 'is.'" (citations omitted)).

[12] *See*, *e.g*., *Nautilus*, 572 U.S. 898, at 910–11.

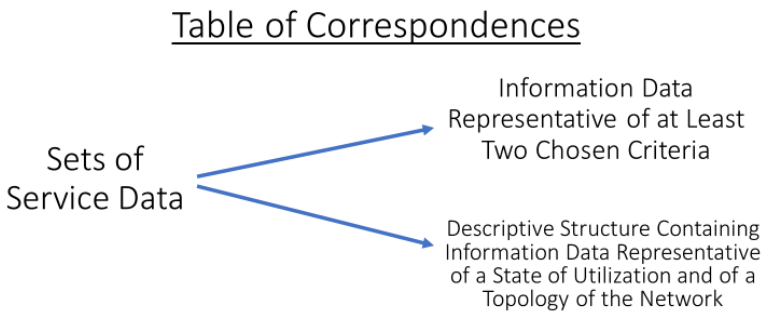
A. Agreed Construction of "interest value" (claim 1)

The parties have agreed that "interest value" means "a number that quantifies the performance difference between a possible path and the ideal solution."

B. "information data representative of at least two chosen criteria" (claim 1)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	data representative of two or more numeric values that identify the resources associated with the various connections between nodes

Claim 1 of the '832 patent recites, in relevant part, "a memory means for storing a table of correspondences between sets of service data and information data representative of at least two chosen criteria and a descriptive structure containing information data representative of a state of utilization and of a topology of the network." '832 patent at 11:37–42. The memory means stores a table that corresponds sets of service data to (A) information data representative of at least two chosen criteria and (B) a descriptive structure containing information data representative of (1) a state of utilization and of (2) a topology of the network.



HPE misreads the "memory means . . ." limitation, conflating the separate sub-elements in violation of accepted principles proscribing the construction of claims in a manner that renders elements superfluous.[13] Contrary to HPE's construction, the "information data representative of

[13] *See Power Mosfet Techs., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004) ("[I]nterpretations that render some portion of the claim language superfluous are disfavored.").

at least two chosen criteria" is not the same "information data" of the descriptive structure representative of a state of utilization and network topology. The specification provides non-limiting examples of "criteria" that may be utilized in accordance with the invention, including the "length of the path," "the number of hops," "the required bandwidth," and other constraints.[14] *See*, *e.g.*, '832 patent at 1:38–49. These criteria are separate and apart from the "information data representative of a state of utilization and of a topology of the network." This term does not need to be rewritten and HPE's fundamentally flawed construction should be rejected.

C. "a processing means for . . ." (claim 1)

Brazos's Position	HPE's Proposed Construction
plain and ordinary meaning, not subject to 35 U.S.C. § 112, ¶ 6	Means plus function. The function is "a) receiving a path set-up request containing a set of service data associated with a stream to be switched, and for determining in said table at least two criteria stored in corresponding relationship to said set of service data associated with the stream, b) ensuring the connectivity of said multiplicity of label switched routers, on the basis of information data stored in said descriptive structure, c) calculating from among said label switch routers possible paths between a departure node and a destination node taking account of at least one of said two criteria that have been determined and then deducing an ideal solution from performances of said possible paths on at least one of said criteria,

[14] "In the foregoing description, reference has been made to (local and global) constraints and criteria that might, in some cases, seem substantially identical. In fact, they can be considered as selection attributes that are sometimes manifested in the form of criteria and sometimes in the form of constraints, given that a criterion is generally the subject of maximization or minimization whereas a constraint is generally defined by one or two fixed or limiting values. The selection attributes are defined by the network operator when configuring the network and depend on the type of service required, for example sending an e-mail or a video conference set-up request, and/or the quality of service (or QoS) required at the time of the initial reservation of resources. To be more precise, criteria are chosen as a function of the type of service required, whereas constraints and their values are chosen as a function of the quality of service required." *Id*. at 10:7–24.

Brazos's Position	HPE's Proposed Construction
	d) assigning each possible path an interest value taking account of said ideal solution and then classifying said possible paths taking account their respective interest values, and e) selecting a path from among said classified possible paths and then associating with said stream to be switched a label representative of said selected path so that said labeled stream is switched via said path to the destination node." The term is indefinite for insufficient disclosure of structure corresponding to the function. Alternatively, the corresponding structure is 2:42-4:8 and 5:48-10:7 of the specification.

There is a rebuttable presumption that § 112, ¶ 6 applies "[i]f the word 'means' appears in a claim element in association with a function."[15] "As [Federal Circuit] precedent makes clear, the presence of the word 'means' and the articulation of a function is not the end of the inquiry."[16] The Federal Circuit has articulated the test in a negative, as follows: "To invoke [§ 112, ¶ 6] the alleged means-plus-function claim element must not recite definite structure which performs the described function."[17] Claim 1 of the '832 patent discloses definite structure. Therefore, Section 112, ¶ 6 does not apply.

In *Apple Inc. v. Motorola, Inc.*, the Federal Circuit set forth a two-part test to determine whether a term is subject to § 112, ¶ 6:

> In the first step, we must determine if the claim limitation is drafted in means-plus-function format. As part of this step, we must construe the claim limitation to decide if it connotes "sufficiently definite structure" to a person of ordinary skill in the art, which requires us to consider the specification (among other evidence). In the second step, if the limitation is in means-plus-function format, we must specifically review the specification for "corresponding

[15] *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1368 (Fed. Cir. 2005) (citation omitted).

[16] *TriMed, Inc. v. Stryker Corp.*, 514 F.3d 1256, 1259–60 (Fed. Cir. 2008).

[17] *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996).

> structure." Thus, while these two 'structure' inquiries are inherently related, they are distinct.[18]

Here, the Court need not move past the first step because, although the claim term recites "means for" language, it recites sufficiently definite structure to a person of ordinary skill in the art on its own, as well as when considered along with the specification.

"A limitation has sufficient structure when it recites a claim term with a structural definition that is either provided in the specification or generally known in the art."[19] In this case, the claim itself recites a structural definition because it details the procedures to performed by the claimed processing means, and those limitations "particularly point[] out and distinctly claim[] the subject matter" of the claims. 35 U.S.C. § 112, ¶ 2. The patentee has not attempted to broadly claim a "processing means" reciting generic software functions that would require disclosure of a sufficient algorithm as corresponding structure in the specification. Rather, the "processing means" is a term "used in common parlance or by persons of skill in the pertinent art to designate structure,"[20] which is permissible "even if the term covers a broad class of structures and even if the term identifies the structures by their function."[21] This term does not invoke § 112, ¶ 6 because the claim provides sufficient specificity for a person of ordinary skill in the art to perform the claimed procedures without undue experimentation. In other words, the limitation itself discloses the algorithmic structure because it sets forth a fixed step-by-step series of instructions for the processing means to follow. As the Federal Circuit has explained:

> The usage "algorithm" in computer systems has broad meaning, for it encompasses "in essence a series of instructions for the

[18] 757 F.3d 1286, 1296 (Fed. Cir. 2014), *overruled in-part on other grounds*, *Williamson v. Citrix Online*, *LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

[19] *Apple*, 757 F.3d at 1299.

[20] *Lighting World*, *Inc. v. Birchwood Lighting*, *Inc.*, 382 F.3d 1354, 1359–61 (Fed. Cir. 2004).

[21] *Id.*

> computer to follow," *In re Waldbaum*, []457 F.2d 997, 998 (1972), whether in mathematical formula, or a word description of the procedure to be implemented by a suitably programmed computer. The definition in Webster's New Collegiate Dictionary (1976) is quoted in *In re Freeman*, 573 F.2d 1237, 1245 (CCPA 1978): "a step-by-step procedure for solving a problem or accomplishing some end." In *Freeman* the court referred to "the term 'algorithm' as a term of art in its broad sense, *i.e.*, to identify a step-by-step procedure for accomplishing a given result." The court observed that "[t]he preferred definition of 'algorithm' in the computer art is: 'A fixed step-by-step procedure for accomplishing a given result; usually a simplified procedure for solving a complex problem, also a full statement of a finite number of steps.' C. Sippl & C. Sippl, Computer Dictionary and Handbook (1972)." *Id*. at 1246.
>
> Precedent and practice permit a patentee to express that procedural algorithm "in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure." [*Finisar Corp. v. DirecTV Grp., Inc.,* 523 F.3d 1323, 1340 (Fed. Cir. 2008).] In *Finisar* the court explained that the patent need only disclose sufficient structure for a person of skill in the field to provide an operative software program for the specified function. *Id*. "The amount of detail required to be included in claims depends on the particular invention and the prior art." *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 624 (Fed. Cir. 1985). . . .[22]

To the extent that the Court determines that the "processing means" limitation does not connote sufficient structure and that the specification must be reviewed to identify a corresponding structure (*i.e.*, step two of the *Apple v. Motorola* test), the specification provides extensive structural detail regarding how to carry out the claimed procedures, including the disclosure of exemplary, non-limiting mathematical formulas known to those in the art. *See* '832 patent at 5:36–9:55. HPE admits as much by identifying almost the entire specification as the corresponding structure in its alternative construction. Although Brazos maintains that the "processing means" term does not invoke § 112, ¶ 6, HPE's contention that this term is indefinite for failure to disclose sufficient corresponding structure cannot succeed.

[22] *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1384–85 (Fed. Cir. 2011).

D. "deducing an ideal solution from performances of said possible paths on at least one of said criteria" (claim 1)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	observing the performance of all paths based on at least one of said criteria, and determining that one path of the possible paths is ideal based on said criteria

The meaning of the term "deducing an ideal solution . . ." is clear from the specification. HPE's construction reveals a fundamental misunderstanding of the claimed invention because the "ideal solution" does not necessarily correspond to one of the possible paths. The specification is explicit on this point, stating:

> It is important to note that the ideal path represented by the ideal solution Z(ꟻ) does not necessarily correspond to one of the possible paths r* of the set of possible paths determined. This is even rarely the case, in that the connections on which the optimum values are observed rarely constitute a connected sequence. Nevertheless, when this is the case, it constitutes the only possible path r* since it dominates all the others.

'832 patent at 8:33–52. HPE's construction improperly combines several procedures performed by the claimed processing means.

Claim 1 makes evident that the possible paths are calculated by taking into account at least one of the said two criteria, then an "ideal solution" is deduced based on the performances of said possible paths on at least one of the said criteria. *See id.* at 11:31–67. The ideal solution is rarely an actual path, and neither the claims nor specification require it to be one. Rather, the specification explains that the ideal path is a "a vector taking the form of a multiplet of components" (*id*. at 8:34–35) calculated in the following manner:

> For each criterion Cp, the best performance value Z*p observed over the possible paths is extracted. Each best value of performance Z*p observed is called the optimum value associated with the corresponding criterion. The various optimum values then constitute the components of the ideal solution Z(ꟻ)=(Z*1, Z*2,…, Z*p), representative of an ideal pathꟻ.

Id. at 8:37–44.

Continuing with the procedures performed by the processing means of claim 1, after calculating the ideal solution, each possible path is assigned an "interest value taking account of said ideal solution and then classifying said possible paths taking account of their respective interest values." '832 patent at 11:53–62. Finally, a "path from among said classified possible paths" is selected. *Id*. at 11:63–67. The "calculating . . . possible paths . . . and then deducing an ideal solution" is separate from the "selecting a path from among said classified possible paths." HPE's construction conflates these two distinct limitations and is fundamentally incorrect because "an ideal path corresponding to an ideal solution exists only in exceptional circumstances." *Id*. at 3:33–36. HPE is wrong because the goal is not to determine that "one path of the possible paths is ideal based on said criteria;" it is to select the path closest to the ideal. HPE's construction is unhelpful and unnecessary because the claims and specification detail how to "deduc[e] an ideal solution from performances of said possible paths on at least one of said criteria."

V. U.S. PATENT NO. 7,519,056 (CASE NO. 6:20-CV-00728-ADA)

The '056 patent pertains to a technique for managing traffic in a multiport network node that is connected to another network node by a tunnel in, for example, a stacked virtual local area network ("VLAN") tunnel or an MPLS tunnel. *See* '056 patent at 1:12–17. The inventions enable flexible deployment of VLANs across service provider networks that utilize tunneling techniques, such as MPLS. *See id*. at 3:1–4. This is accomplished by "establishing logical ports that have bindings to transport tunnels." *Id*. at 3:8–10. "The logical ports are then treated the same as physical ports in defining broadcast domains and forwarding traffic at particular service provider edge devices. Because the logical ports have bindings to transport tunnels, adding a particular logical port to a broadcast domain causes traffic from the respective VLAN to

automatically be forwarded in the transport tunnel that is bound to the logical port. Logical ports enable a VLAN that spans an intermediate network to be established simply by adding the respective logical port to the broadcast domain of the VLAN." *Id*. at 3:10–19.

A. "VC label in a layer 2 MPLS label stack" (claims 1, 18, 21)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	the bottom label in a layer 2 MPLS label stack consisting of a top tunnel label and a bottom virtual circuit label, which is used by an egress label edge router to process the packet

HPE's construction is improperly narrow and excludes an embodiment. The specification states than in one embodiment "[t]he second label is placed at the bottom of the label stack and is referred to as the 'VC label.' The VC label is used by the egress label edge router . . . to determine how to process the packet." '056 patent at 7:32–36. However, in another embodiment the VC label is referred to as the "inner label." *Id*. at 10:6–12. "The packet is forwarded, as described above with reference to FIG. 8, with two MPLS labels. The outer MPLS label being the tunnel label, which is used to forward the packet through the MPLS domain, and the inner label being the VC label, which is used . . . to determine how to forward the packet." *Id*. HPE's construction would exclude this embodiment in which the VC label is an inner label in a system where the packed is forwarded with inner and outer labels, which is improper.[23] HPE's insertion of "which is used by an egress label edge router to process the packet" improperly limits the scope of the claim because the specification makes clear that a service provider edge device ("SPED"), such as a switch, can act as the label edge router. *See*, *e.g*., '056 patent at 8:31–33 ("The VC label is the label on which the far-end SPED (which acts as the

[23] *Oatey Co*. *v*. *IPS Corp*., 514 F.3d 1271, 1276 (Fed. Cir. 2008). ("We normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification.").

egress label edge router) will receive the packet."). A person of ordinary skill in the art would know what a "VC label in a layer 2 MPLS label stack" is[24] and the term does not need to be rewritten to HPE's preference.

B. "dynamically determined" (claims 1, 18, 21)

Brazos's Proposed Construction	HPE's Proposed Construction
plain and ordinary meaning	indefinite

As the meaning of the term "dynamically determined" is clear to a person of ordinary skill in the art, including when read in the context of the intrinsic evidence, it is not indefinite. *See* Ex. 5, Declaration of Scott M. Nettles, Ph.D. ("Nettles Decl."). The phrase "dynamically determined" is part of a larger clause that recites "wherein the LSP that corresponds to the MPLS tunnel is dynamically determined by a label distribution protocol." *See* '056 patent at claims 1, 18, 21. The label distribution protocol "dynamically determines" which LSP corresponds to the MPLS tunnel. *See* Ex. 5, Nettles Decl., at ¶¶ 27–28. The remainder of the limitation provides further context regarding the nature of the tunnels.

> wherein establishing said logical port includes binding said logical port to a multi-protocol label switched (MPLS) tunnel and a destination IP address and wherein the dynamic MPLS tunnel is an MPLS tunnel that does not specify a particular label switch path (LSP) that is to be used to reach a target destination and wherein the LSP that corresponds to the MPLS tunnel is dynamically determined by a label distribution protocol (LDP).

'056 patent at claims 1, 18, 21. The claims themselves define a dynamic MPLS tunnel as "an MPLS tunnel that does not specify a particular label switch path (LSP) that is to be used to reach a target destination." *See* Ex. 5, Nettles Decl. at ¶¶ 27–28. "Given this definition, a POSITA would understand that an LSP would be needed to transport data across the tunnel because that is

[24] *See*, *e.g.*, '056 patent at FIG. 7; *see also* Exs. 3, 4.

a basic aspect of MPLS. A POSITA would further understand that since the tunnel does not specify an LSP, one would need to be determined dynamically when needed. Even just based on the claims 'dynamically determined' is clearly not indefinite." Ex. 5, Nettles Decl. at ¶ 28.

The specification further dispels any claims of unresolvable ambiguity, explaining:

> MPLS tunneling can also be implemented using dynamic MPLS tunnels. Dynamic MPLS tunnels are MPLS tunnels that do not specify a particular LSP that must be used to reach the target destination. Using a dynamic MPLS tunnel, the particular LSP that is utilized may change from time to time in response to factors such as traffic load and latency.

'056 patent at 9:7–12; *see also*, *e.g.*, *id.* at claim 24 ("The method of claim 1 further comprising changing the particular LSP that is utilized by the dynamic MPLS tunnel in response to traffic conditions."). A person of ordinary skill in the art would understand that this means the path identified by the LDP is not fixed or predetermined and "may change from time to time in response to factors such as traffic load and latency." *Id*. at 9:7–12; *see also* Ex. 5, Nettles Decl. at ¶¶ 29–32 ("These disclosures provide support for the language of the claims and provide further context that would inform a POSITA that "dynamically determined" is well-defined and indeed is part of the mechanism of dynamic MPLS tunnels."); Exs. 3, 4.

Respectfully submitted,

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